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A Cross Sectional Study to Assess the Knowledge and Practice Regarding Overuse of Drugs and Antibiotics for Common Cold among Final Year Nursing Students in Selected Nursing Colleges, Mangaluru

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ABSTRACT

The overuse of drugs and antibiotics for the treatment of the common cold remains a significant public health concern worldwide, despite extensive efforts to promote rational medication use. The common cold is predominantly caused by viruses, making antibiotic therapy ineffective; however, studies show that up to 50% of antibiotic prescriptions for upper respiratory infections are unnecessary or inappropriate. According to the World Health Organization (WHO), antimicrobial resistance (AMR) is one of the top 10 global public health threats, with misuse and overuse of antibiotics being major contributors. Healthcare professionals, particularly nurses, play a pivotal role in patient education and antimicrobial stewardship. Final-year nursing students, as future frontline providers, must possess adequate knowledge and demonstrate responsible practices regarding drug use. Assessing their understanding and behaviors is essential to addressing this global issue and curbing the growing threat of AMR.

Method: A cross sectional descriptive study was conducted among 60 final year nursing students who were selected by non-probability purposive sampling technique. The study was conducted in selected nursing college, Mangaluru. Data was collected through demographic proforma, structured knowledge questionnaire, and practice checklist. The data collected was analysed and interpreted based on descriptive and inferential statistics.

Result: The study findings revealed that, in terms of knowledge levels, the majority of participants (46.67%) had a moderate level of knowledge, with a total mean score of 12.36 ± 4.64. Regarding practice, the majority (63.33%) demonstrated poor practice related to the overuse of drugs and antibiotics for the common cold, with a total mean score of 5.26 ± 2.50. The association between knowledge and practice scores and selected demographic variables was examined using the Chi-square test, which showed no statistically significant association.

Conclusion: Overall, the findings of the present study suggest a need for educational interventions to improve the knowledge and practices of final-year nursing students concerning the overuse of drugs and antibiotics for the common cold.

Keywords: Knowledge, Practice, Drugs, Antibiotics, Nursing Students.

INTRODUCTION

The inappropriate use of antibiotics, particularly for viral infections like the common cold, has emerged as a significant contributor to the global burden of antimicrobial resistance (AMR). The common cold is a self-limiting viral illness predominantly caused by rhinoviruses, yet antibiotics are often misprescribed despite their ineffectiveness against viruses. Globally, studies indicate that approximately 30% to 50% of antibiotics prescribed in outpatient settings are unnecessary, especially for upper respiratory tract infections (URTIs), which are usually viral in nature. Nurses, as the largest group of healthcare providers, play a critical role in educating patients and advocating for the rational use of medications. Final-year nursing students, poised to enter clinical practice, must possess not only the theoretical knowledge but also practical competence in antibiotic stewardship. However, research has shown that gaps persist in both knowledge and practice among nursing students, potentially undermining efforts to combat AMR.

Need for the study

The World Health Organization (WHO) has repeatedly emphasized that irrational antibiotic use is a key driver of AMR, threatening the effective treatment of bacterial infections worldwide. In many developing countries, the issue is further compounded by the easy accessibility of antibiotics without prescriptions and limited regulatory enforcement. Cultural expectations, patient demand, and lack of awareness contribute to the persistent overuse of antibiotics for ailments like the common cold. In a study conducted in India, 62% of nursing students believed antibiotics could speed up recovery from a cold, and 38% admitted to self-medicating with antibiotics. These statistics underscore the need for targeted educational interventions and behavioral change strategies in nursing education.

Research statement:

A cross-sectional study to assess the knowledge and practice regarding overuse of drugs and antibiotics for common cold among final year nursing students in selected nursing colleges, Mangaluru.

Objectives

To assess the knowledge regarding overuse of drugs and antibiotics for common cold among final year nursing students.

To assess the practice regarding overuse of drugs and antibiotics for common cold among final year nursing students.

To find the correlation between knowledge and practice scores on overuse of drugs and antibiotics for common cold among final year nursing students.

To find the association between knowledge and practice scores of final year nursing students regarding overuse of drugs and antibiotics for common cold with their selected demographic variables.

Hypothesis

To achieve the stated objectives, the following hypothesis was formulated at 0.05 level of significance.

H_1: There will be a significant correlation between knowledge and practice regrading overuse of drugs and antibiotics for common cold among final year nursing students.

H_2: There will be a significant association between the knowledge scores of final year nursing students regarding overuse of drugs and antibiotics for common cold with their selected demographic variables.

H_3: There will be a significant association between the practice scores of final year nursing students regarding overuse of drugs and antibiotics for common cold with their selected demographic variables.

REVIEW OF LITERATURE

Alahmadi et al. carried out a study among 284 students from nursing, clinical laboratory science, and pharmacy programs in Saudi Arabia. Although the students demonstrated a moderate to high level of general knowledge about antibiotics and antibiotic resistance, many had inadequate understanding regarding appropriate antibiotic use for viral infections like the common cold. Furthermore, the study identified several influencing factors on students' knowledge levels, including gender, academic program, and prior attendance at seminars or training sessions related to antibiotics. The researchers concluded that structured educational interventions, particularly those tailored to individual learning needs, are necessary to correct misconceptions and promote responsible drug use among future healthcare professionals.[1]

In a survey conducted among nursing students in Nepal, Shrestha et al. found that while 70% of participants demonstrated adequate theoretical knowledge about antibiotics and their indications, only 45% reported practicing rational antibiotic use. The findings revealed a concerning theory-practice gap, where students understood that antibiotics should not be used for viral infections but still did so in practice. This discrepancy was attributed to peer influence, cultural norms, and insufficient supervision during clinical placements. The researchers emphasized the need for stronger clinical oversight, reinforcement of classroom teachings during practical sessions, and more active involvement of clinical educators to ensure safe and effective medication practices among nursing students.[2]

Sharma et al. investigated self-medication patterns among medical undergraduates in India. The study found that 67.78% of students engaged in self-medication with antibiotics, primarily for treating upper respiratory infections such as the common cold. Alarmingly, 74.59% of these students experienced adverse drug reactions. The most cited reason for self-medication

was convenience, accounting for 86.07% of the responses. This data indicates a significant public health risk and points to a critical gap in practical understanding, even among future healthcare professionals. The researchers concluded that stricter regulations on the sale of antibiotics and improved pharmacology education are needed to curb this growing issue.[3]

Jha and colleagues conducted a study among 131 medical students and interns in Lalitpur, Nepal, to assess their knowledge, attitudes, and practices regarding antibiotic use. The findings showed that 71% of participants were final-year students, with an average knowledge score of 76, attitude score of 58 (out of 65), and a practice score of only 6 (out of 12). While knowledge and attitude levels appeared relatively high, the low practice score highlighted a clear disconnect between theory and application. Interns demonstrated slightly better practice scores, suggesting that increased clinical exposure positively influences proper antibiotic use. This study underlines the importance of bridging the gap between classroom learning and clinical behavior through practical reinforcement and mentorship.[4]

Parveen and colleagues conducted a study to assess the impact of educational modules on antibiotic use among nursing students in India. The study found that structured learning interventions significantly improved both the attitudes and practices of students toward rational antibiotic use. Before the intervention, many students held misconceptions about antibiotics being effective against viral infections such as the common cold. After completing the modules, there was a measurable increase in responsible prescribing behavior and a reduction in self-medication rates. The authors advocated for the inclusion of such modules as a mandatory component of nursing education to ensure that students develop a sound understanding of pharmacology and public health responsibilities.[5]

METHODOLOGY

The study assessed the knowledge and practice regarding overuse of drugs and antibiotics for common cold among final year nursing students in selected nursing college, Mangaluru. Using Wiedenbach's Clinical Nursing Practice-A Helping Art model as the framework, the descriptive design employed. Sixty final year nursing students were selected through non-probability purposive sampling. Knowledge was measured using a 25-item structured questionnaire and practice was measured using 10-item practice checklist. Data analysis involved descriptive statistics (frequency, percentage, range, mean, median, standard deviation, mean percentage) and inferential statistics (chi-square test). Results were presented in tables and figures.

RESULTS

Table 1: Frequency and percentage distribution of samples according to the demographic variables

N=60

Sl. No.	Variables		Frequency (f)	Percentage (%)
1.	**Age in years**			
	1.1	21	34	56.66
	1.2	22	13	21.66
	1.3	23	8	13.34
	1.4	24	5	8.34
2.	**Gender**			
	2.1	Male	42	70
	2.2	Female	18	30
3.	**Religion**			
	3.1	Hindu	19	31.66
	3.2	Muslim	8	13.34
	3.3	Christian	33	55
4.	**Any of your family members/close relatives working in health-related fields?**			
	4.1	Yes	24	40

	4.2	No	36	60
5.	**Have you attended any seminar or training related to rational use of antibiotics?**			
	5.1	Yes	0	0
	5.2	No	60	60
6.	**Sources from where you usually obtain antibiotics**			
	6.1	Pharmacy (with perception)	27	45
	6.2	Pharmacy (without prescription)	19	31.66
	6.3	Leftover from previous prescriptions	6	10
	6.4	Friends/Relatives	8	13.34
7.	**What is your main source of information regarding the overuse of drugs and antibiotics for common cold?**			
	7.1	Academics	13	21.66
	7.2	Teachers	16	26.66
	7.3	Family/Friends	8	13.34
	7.4	Health personnel	11	18.34
	7.5	Mass media	12	20

The above table describes that the majority of final-year nursing students were 21 years old (56.66%) and predominantly male (70%). Most participants identified as Christian (55%). About 60% had no family members working in health-related fields. None of the students had attended seminars or training on the rational use of antibiotics. The most common source of antibiotics was from pharmacies with a prescription (45%). Teachers were the main source of information on antibiotic overuse (26.66%).

Table 2: Frequency and percentage distribution of samples according to the level of knowledge

N=60

Level of knowledge	**Scores**	
	f	**%**
Inadequate	21	35%
Moderate	28	46.67%
Adequate	11	18.33%
Total	**60**	**100%**

The findings of the study revealed that majority 28 (46.67%) of the subjects had moderate knowledge and 21 (35%) of the subjects had inadequate knowledge and only 11 (18.33%) of the subjects had adequate knowledge on overuse of drugs and antibiotics for common cold.

Table 3: Range, mean, SD and mean percentage of knowledge score of final year nursing students

N=60

Variable	**Range of scores**	**Maximum possible**	**Mean**	**Median**	**Standard deviation**	**Mean %**
Knowledge score	7-22	25	12.36	11	4.64	**49.44%**

The data presented in above table shows that the mean knowledge and SD was 12.36 ±4.64 and the mean percentage was 49.44%.

Table 4: Frequency and percentage distribution of samples according to the level of knowledge

N=60

Level of knowledge	Scores	
	f	**%**
Inadequate	21	35%
Moderate	28	46.67%
Adequate	11	18.33%
Total	**60**	**100%**

The findings of the study revealed that majority 38 (63.33%) of the subjects had poor practice and 22 (36.67%) of the subjects had good practice on overuse of drugs and antibiotics for common cold.

Table 5: Range, mean, SD and mean percentage of practice score of final year nursing students

N=60

Variable	Range of scores	Maximum possible score	Mean	Median	Standard deviation	Mean %
Practice score	1-10	10	5.26	5	2.50	52.6%

The data presented in above table shows that the mean practice and SD was 5.26 ±2.50 and the mean percentage was 52.6%.

Table 6: Correlation between knowledge and practice regarding overuse of drugs and antibiotics for common cold
N=60

Parameter	Max Score	Mean	SD	Mean %	'r' value
Knowledge	25	12.36	4.64	49.44%	**0.96***
Practice	10	5.26	2.50	52.6%	

The above table shows that the correlation between knowledge and practice regarding overuse of drugs and antibiotics for common cold among final year nursing students r=0.96 (p= 0.05) and shows that there is positive correlation between knowledge and practice regarding overuse of drugs and antibiotics for common cold.

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Table 7: Association between knowledge scores of final year nursing students with selected demographic variables N=60

Sl. No	Demographic Variables		< median	≥ median	P value	χ2 value
1.	**Age in years**					
	1.1	21	15	19	**0.60**	**1.86**
	1.2	22	8	5		
	1.3	23	5	3		
	1.4	24	2	3		
2.	**Gender**					
	2.1	Male	22	20	**0.30**	**1.04**
	2.2	Female	12	6		
3.	**Religion**					
	3.1	Hindu	11	8	**0.61**	**0.98**
	3.2	Muslim	3	5		
	3.3	Christian	18	15		
4.	**Any of your family members/close relatives working in health-related fields?**					
	4.1	Yes	10	14	**0.39**	**0.71**
	4.2	No	19	17		
6.	**Sources from where you usually obtain antibiotics:**					
	6.1	Pharmacy (with perception)	11	16	**0.47**	**2.50**
	6.2	Pharmacy (without prescription)	11	8		
	6.3	Leftover from previous prescriptions	4	2		
	6.4	Friends/Relatives	5	3		
7.	**What is your main source of information regarding the overuse of drugs and antibiotics for common cold?**					
	7.1	Academics	6	7	**0.74**	**1.93**
	7.2	Teachers	8	8		
	7.3	Family/Friends	3	5		
	7.4	Health personnel	6	5		
	7.5	Mass media	8	4		

The data presented in Table 7 shows there was no significant association found between the mean knowledge scores and the sleeted demographic variables at 0.05 level of significance.

Table 8: Association between knowledge scores of final year nursing students with selected demographic variables N=60

Sl. No.	Demographic Variables		< median	≥ median	P value	χ2 value
1.	**Age in years**					
	1.1	21	16	18	**0.53**	**2.17**
	1.2	22	9	4		
	1.3	23	4	4		
	1.4	24	2	3		
2.	**Gender**					
	2.1	Male	24	18	**0.90**	**0.01**
	2.2	Female	10	8		
3.	**Religion**					
	3.1	Hindu	10	9	**0.69**	**0.71**
	3.2	Muslim	3	5		
	3.3	Christian	14	19		
4.	**Any of your family members/close relatives working in health-related field?**					
	4.1	Yes	11	13	**0.74**	**0.10**
	4.2	No	15	21		
6.	**Sources from where you usually obtain antibiotics:**					
	6.1	Pharmacy (with perception)	12	15	**1.48**	**0.68**
	6.2	Pharmacy (without prescription)	10	9		
	6.3	Leftover from previous prescriptions	4	2		
	6.4	Friends/Relatives	3	5		
7.	**What is your main source of information regarding the overuse of drugs and antibiotics for common cold?**					
	7.1	Academics	6	7	**0.87**	**1.24**
	7.2	Teachers	6	10		
	7.3	Family/Friends	4	4		
	7.4	Health personnel	5	6		
	7.5	Mass media	7	5		

The data presented in Table 8 shows there was no significant association found between the mean practice scores and the sleeted demographic variables at 0.05 level of significance.

Implication of the study

The implication of study can be seen in areas of Nursing practice, Nursing education, Nursing administration, and Nursing research.

Nursing education

Educational programs must integrate comprehensive content on antimicrobial stewardship to enhance students' understanding of appropriate drug use. Teaching strategies such as case-based learning and simulations should be employed to demonstrate the risks associated with antibiotic overuse. Nursing curricula should emphasize critical thinking and promote sound clinical judgment in pharmacological decision-making. Regular assessments and feedback mechanisms can help identify and address knowledge gaps in this area.

Nursing practice

In clinical practice, nurses play a crucial role in promoting the rational use of medications, particularly antibiotics, to prevent resistance and ensure patient safety. Final-year nursing students must be trained to apply evidence-based guidelines when managing self-limiting conditions like the common cold. They should discourage unnecessary self-medication and support appropriate prescribing practices. Additionally, nurses should actively educate patients about the viral origin of common colds and the limited role of antibiotics in such cases.

Nursing administration

At the administrative level, institutions should develop and implement clear guidelines to promote appropriate antibiotic use among students and staff. Regular workshops and seminars on medication safety and infection prevention should be organized. Administrators must also ensure that students adhere to evidence-based practices during clinical placements through monitoring and mentorship. Supporting faculty development in pharmacology and infectious disease education is essential to maintain up-to-date teaching practices.

Nursing research

Research initiatives should be encouraged to explore the effectiveness of educational interventions aimed at reducing antibiotic misuse among nursing students. Student participation in community-based projects can raise awareness about the consequences of drug overuse. Longitudinal studies could be conducted to evaluate the impact of curriculum enhancements on students' prescribing behavior over time. Furthermore, identifying barriers to proper antibiotic use can inform the development of targeted strategies to improve practice.

CONCLUSION

It is concluded that the majority of final-year nursing students had a moderate level of knowledge and poor practices regarding the overuse of drugs and antibiotics for the common cold. The findings of the present study suggest an increasing need to conduct awareness programs for nursing students on the overuse of drugs and antibiotics for the common cold. The development of an information booklet on this topic would help enhance the knowledge and practices of final-year nursing students.

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